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ABSTRACT

The purposes of this paper are (1) to highlight some of the complex issues involved in teenage pregnancy and its consequences; (2) to comment on some of the problems that make solutions difficult to achieve; and (3) to indicate areas in which further research is of critical importance. Among the issues of teenage pregnancy discussed are the prevalence of pregnancy, sexual activity and marriage, contraceptive use, risk of pregnancy, and risk of repeated pregnancy. The consequences of teenage pregnancy for the parents, the child, the family of origin, and the economic consequences for society are delineated. The discussion of research needs emphasizes primary prevention through effective contraceptives that are designed for and acceptable to teenagers; sex education that includes information on the nature of sexuality, risks of pregnancy and the costs and burdens of premature parenthood; and increased attention to the value of virginity. Research needs related to unresolved questions in the area of secondary prevention, research needed to improve longer-range outcomes for the children of teenagers, and the need for the evaluation of preventive and intervention programs are indicated. (Author/RH)

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MATRIX NO. 5

TEENAGED PREGNANCY

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TEENAGED PREGNANCY

Introduction

Teenaged pregnancy in the United States is neither epidemic nor a new phenomenon. Nonetheless, in recent years, it has generally come to be perceived as one of the most pressing, wasteful, repetitive and costly human problems in this country.[1,2] Fortunately, given adequate resources and the societal motivation necessary to effect change, it is one that should be generally amenable to the *primary* prevention of the initial pregnancy as a teenager and, where this is not accomplished, to the *secondary* prevention of the adverse consequences for the young family and the child. Furthermore, both primary and secondary prevention would appear to represent a relatively modest investment likely to yield substantial dividends, not only in terms of human health and happiness, but also in terms of reduction in the enormous expenditures for health care, special education and welfare support now required for dealing with the consequences.[3]

During the past few years, an abundance of information has become available about many aspects of the chain of events leading to sexual activity, pregnancy, childbirth and parenting among teenagers. The publication, *Eleven Million Teenagers,* prepared and widely circulated by the Alan Guttmacher Foundation[4] provided strong impetus to the growing public concern. It presented (1) a litany of basic facts about teenaged sexuality, parenting and childbearing and their adverse consequences, and (2) concrete suggestions for resolving the problem. It stimulated both research and intervention, but many unanswered questions remain. A second publication from the Foundation,[5] *Teenaged Pregnancy: The Problem Which Hasn't Gone Away* provides an updated and more current appraisal of the problem.

The purposes of this paper are, on the basis of extensive clinical experience with pregnant adolescents and teenaged parents and their children:[6] (1) to highlight some of the complex issues involved in teenaged pregnancy and its consequences, (2) to comment on some of the problems that make solutions difficult to achieve, and (3) to indicate areas in which further research is of critical importance.

Definitions

Definition of terms is essential for a meaningful discussion of issues.

During recent years, the terms "teenaged" and "adolescent pregnancy" often have been used synonymously. This is unfortunate as it beclouds the issues. The life situation of adolescents (defined as less than 18 years of age) is likely to be very different from that of 18- and 19-year olds, who by definition are still teenagers. The younger girls are, for the most part, dependent in school and unmarried. Many are growing rapidly and are physically, emotionally and socially immature. In fact, they are adolescents. They appear to have greater risk of pregnancy complications, though these risks are not as clear for white adolescents as they are for other ethnic groups, and may well be confounded by the risks associated with low socioeconomic status. Furthermore, there is evidence that the biological risks can be reversed by early and appropriate prenatal care.[7] Adolescent parents and their children are also at greater health and social risk during the years after the birth.

By contrast, the older teenagers usually have finished high school and more often are married. They have passed the period of rapid physical growth, and the emotional and social turmoil of adolescence has subsided. They experience the lowest risks of perinatal mortality of any age group.[8] However, the reduced biological and psychosocial risks notwithstanding, they are, in general, at greater risk than women who delay childbearing until age 20 or beyond. Because results for all teenagers (i.e., those 15 to 19 years) are frequently combined, some of the risks experienced by the true adolescents may have been underestimated.

Health also requires definition. The broad definition of the World Health Organization, which stresses an optimal state of well-being in the physical, mental and psychosocial domains, is particularly applicable to the multifaceted issues of adolescent pregnancy. It is the interaction between physical, psychosocial and environmental variables that determines the outcome, thus, an ecological approach is essential for (1) understanding the processes leading to outcome, and (2) isolating the effects of individual variables such as age and social class.

Complex Issues in Teenaged Pregnancy

Prevalence of Pregnancy. The prevalence of teenaged pregnancy is itself an issue that has stirred controversy. As indicated, the problem has been described as epidemic[4] which is inaccurate. Understanding of the situation requires consideration of three demographic aspects: (1) the absolute number of pregnancies and/or births among teenagers in the population in a given year; (2) the fertility rates; i.e., the number of births per 1,000 teenaged women of a given age; and (3) the proportions of births to women of all ages that are occurring among teenagers. Each piece of information provides a somewhat different perspective.

The term "epidemic" refers to the very *large number of teenagers who became pregnant in 1974,* more than one million, ages 15 to 19 years; i.e., one in every 10. In addition, there were more than 30,000 who were 14 years or less.[4] This large number reflects the large numbers of teens in the population at that time, a consequence of entry of women born during the post-World War II baby boom into the childbearing years. The population bulge has passed now into the 20s, and the number of teenagers is declining. The effect of this decline, however, is more than offset by the steady increase in sexual activity and the use of less effective contraceptives,[9] particularly among white girls. Between 1973 and 1978, there was a 13% increase in the number of teenaged pregnancies.[5]

In 1978, of 1,142,000 pregnancies among teens, 434,000 (38%) were terminated by abortion. Only 192,000 (17%) were postnuptially conceived; 32% ended in premaritally conceived live births; the remaining 13% ended in miscarriage or stillbirth.[5]

The *fertility rates* tell a different story. The number of births per 1,000 teenaged females, 15 through 19, has declined somewhat since 1965, however the decline has been less for teenagers than older women, and rates for young white adolescents, below age 15, have increased. Both contraception and abortion are in large part responsible for declining birth rates. Even though the birth rates have declined, the

U.S., with a rate of 52 per 1,000 women aged 15 through 19 years, has one of the highest rates among the more developed societies. By comparison, Japan has a rate of 3; the Netherlands and Switzerland, a rate of 10; and Sweden, which is generally regarded as sexually free, has a rate of 25.

The third point with respect to prevalence, which requires consideration, concerns the very large *proportion* of all births made up by those to teenagers. Overall, approximately, one birth in five is to a teenager. Among all first births, the proportion is almost one-third, and in large urban centers, such as Baltimore, one-half of all first births is to teenagers.[10] Considering the long-term consequences for the young parents, the child and society, the future implications are a matter for great concern.

Other disturbing factors include: The steady increase in illegitimate births; that 9 of 10 teenagers who decide to have the baby keep it rather than put it up for adoption; and, that most premarital pregnancies among teens are unintended, 84% among whites and 79% among blacks.[9] In 1978, 86% of pregnancies among unmarried teens and 51% among those who were married were unintended.[5]

Sexual Activity and Marriage. Between 1971 and 1979, there was a substantial increase in sexual activity among teens of all ages.[9] The percentage of 15- to 19-year olds, living in metropolitan areas, reporting premarital intercourse, increased from 30% to 50%. In 1979, 47% of white and 66% of black females (15 to 19 years) had experienced intercourse. The average age of first intercourse was 16.4 years for whites; 15.3, for blacks.

While premarital sexual activity increased by two-thirds during the '70s, teenaged marriage rates declined by 4% for whites and 45% for blacks.[5] In 1978, the 1.14 million pregnancies notwithstanding, only 6.9% of young women and 1.6% of young men 14 through 19 years of age were married.

Contraceptive Use. Zelnik and Kantner[9] provided the surprising information that among teenaged women experiencing a first premarital pregnancy, 84% of whites and 79% of blacks did not intend to become pregnant, yet only 35% of whites and 31% of blacks always used contraception; 24% of whites and 36% of blacks never used it. Zelnik and Kantner also reported that since 1976, more teenagers are using contraception but there has been a decline in the use of the more effective methods of contraception and more dependence on withdrawal and rhythm.

Risk of Pregnancy. The risk of pregnancy is, of course, related to a number of variables, including the frequency of intercourse, and contraceptive use and method. Tietze[11] has estimated that in 1976, 1,020,000 pregnancies were conceived prior to age 20. On the basis of information then current, he estimated that by 1984, of the approximately two million girls becoming 14 years old in 1976, 21% will have had at least one live birth; 15%, at least one legal abortion; and 6%, at least one fetal loss. In all, between 34% and 39% will have been pregnant one or more times.

Zabin, Kantner and Zelnik[12] have reported that, in general, because of early age of onset of intercourse associated with nonuse of contraceptives, 20% of first premarital pregnancies occur within 1 month of onset of coitus and 50% within 6 months. The younger the age of the teen, the greater her risk of pregnancy.

The relationship between contraceptive use and pregnancy is striking. Among sexually active teenagers, 62% of those never using a contraceptive became pregnant, twice as many as those who used a method consistently. Only 14% of those who had used a medical method (pill, IUD or diaphragm) consistently had been pregnant. It is estimated that in 1976, if no contraception had been used, approximately twice as many teenagers would have been pregnant.[5] It is important to realize that contraceptive failures are not uncommon.

Risk of Repeated Pregnancy. Women who start childbearing as teenagers and particularly as adolescents, have more children, more unwanted children and more illegitimate births, and closer child spacing, than do women who delay childbirth beyond 20 years of age.[13-16]

In 1976, 15% of teenagers who had had a premarital pregnancy conceived again within 12 months compared to 22% in 1971; among those who had had a live birth, 17.5%; and those who had an abortion, 9%.[5] Among young black women the risk of repeated pregnancy has been much higher than among white teenagers.

Consequences of Teenaged Pregnancy

For the Young Parents. The health, educational, social and economic consequences for the teenager generally are unfavorable. The risk of abortion, during the first 4 months of pregnancy is less than that of bearing the child. The risk of sexually transmitted disease (STD), particularly with the less traditional infections, such as cytomegalovirus, Chlamydia Trachomatis and herpes virus, which are increasing in frequency even faster than gonorrhea,[17] is a serious problem both during pregnancy and later. Pregnancy complications are more frequent.[4]

Card and Wise,[18,19] in a longitudinal study of high school students (in Project Talent) followed at approximately 19, 23 and 29 years of age, reported long lasting consequences for both teenaged mothers and fathers. Both parents, in general, suffered substantial educational deficits; the mothers more than the fathers. As a result, they had lower prestige jobs, and the mothers, at least, had lower incomes and less job satisfaction. They also experienced greater marital instability, and the young women had a larger number of children. Examination of data collected in grade 9 (at about 15 years of age) showed a positive relationship between age at first pregnancy and race, low social class, low academic aptitude and low educational expectations. When matched samples were constructed and these variables were taken into account, however, the likelihood of graduating from high school and from college and the number of children by age 29 were still clearly related to the age of first childbearing. Young women who had a first birth before 18 were half as likely to finish high school as those who waited until 20.

Two other longitudinal studies have similar findings: Furstenberg's[16] 5-year follow-up of teenaged childbearing included a comparison group of schoolmates who did not have a child before 20, and ours,[15] which compared the 12-year outcome following the first birth among adolescents and primiparous women ages 20 to 24 in a poor, inner city population. This study also showed that the mothers who had their first birth as an adolescent were more than twice as likely (16%) to be entirely

supported from public welfare 12 years after the birth as were those who first delivered when 20 through 24 years of age (7%).

It should be noted that except for the studies by Card and co-workers, there is virtually no information about the fathers.

For the Child. Like the young mother, the child is, generally, at greater biological and psychosocial risk than the child of an older mother. There is a substantial risk of low birthweight (LBW), which is inversely proportional to the mother's age at delivery. The risk of LBW is greater in black and poor teenagers than in whites. The risks of infant death during the first year parallel those for LBW. Older studies focused on these outcomes. These problems still exist, but, except perhaps for low birthweight, are amenable to adequate prenatal care and nutrition. Postnatal infant mortality and illness continue to be problems, and all recent, longitudinal studies show deficits in cognitive development, especially among the male children.[20] Less consistent effects are found in the social and emotional adjustment and in school achievement. An ecological approach to the study of these consequences suggests that much, but not all, of the effect is caused by environmental factors concerned with being raised in a single parent family, in difficult social and economic circumstances. The daughters of teenaged mothers tend to repeat the pattern.[19,20] Among adolescents cared for in The Johns Hopkins Center for Teenaged Parents, 76% of the grandmothers had their first birth before age 20; 51%, before age 18.

I would suggest, on the basis of extensive clinical observations in the Hopkins Center, that the cognitive deficits, documented by us[15] and others,[21,22] have a multifactorial background. Race and social class are important, but within race and social class, there are observable differences between older and adolescent mother-child pairs and indeed between adolescents in the way they relate to their babies. We have observed delayed language development in the infants as early as 1 year and very significant delay by ages 2 and 3. This delay appears to relate to mother-child interaction, the quality of the mother's verbal communication and the amount of verbal reinforcement received by the child. Adolescents are characteristically egocentric, impulsive and impatient, and those we care for also sadly lack information about child development, parenting, family planning and nutrition.

For the Family of Origin. There is beginning to be a body of information about the family of origin of the girl and its impact on her sexual activity, contraceptive use and pregnancy.[23] Furstenberg[16,24] has made important contributions to our understanding of the importance of the extended family and its supportive network to the eventual outcome for both the young mother and child. He pointed out that there are benefits as well as burdens for the mother's family. Our own experience and those of Kellam[25] have shown the disadvantage of living in a *mother alone* family. There is virtually no available information about the father's family. The family impact seminars have provided insights as to the role of the girl's family in determining long-term outcome.[24]

For Society: Economic Consequences. Teenaged pregnancy is an extraordinarily costly social problem. Teenaged parenthood, presumably through lack of educational attainment, problems in arranging child care and the burden of repeated

pregnancy, often results in downward mobility, particularly for the single mother without a supportive family network.

Moore and colleagues[1,26] have estimated that 49.7% of expenditures for Aid to Families with Dependent Children (AFDC) (4.7 billion dollars annually) go to women who had their first birth as a teenager. But teenaged births make up less than one-fifth of all births. However, Moore also indicated that there is *no* evidence to suggest that AFDC support is an inducement to teenagers to become pregnant. In 1978, 1.3 million small children and an additional 1.6 million children under age 5 were living with mothers who gave birth as a teenager.[5]

Researchers at the Stanford Research Institute[2] have estimated that each first birth to a teenager in 1979 will cost $18,710 from government sources over the ensuing 20 years, a formidable sum when multiplied by some 550,000 births.

As an example of the scope of the problem in large metropolitan areas, in the City of Baltimore, approximately 3,100 births were to teenagers in 1978, almost one-third of all births. The Hopkins Center enrolled over 400 pregnant adolescents (below 18 years) in 1980, of whom 90% were eligible for medical assistance, and to medical care costs must be added those for special education, and welfare support, a very substantial burden on government funds.

The Collaborative Perinatal Project (CPP), of the National Institute of Neurological and Communicative Disorders and Stroke, provided the opportunity for a prospective examination of the long-term consequences of teenaged pregnancy (Broman[21]). The large numbers of pregnancies among black and white women in the CPP permitted comparisons between the immediate and long-term outcome for teenagers and their children with older women and their children. While the frequency of teenaged pregnancy has increased since the 1960s, the basic comparisons remain valid and the importance of the ecological issues becomes very clear.

Among the population of women in the CPP project, pregnancy under age 18 was more frequent among blacks (14%) than whites (5%). As compared with women in their 20s, adolescent mothers were of lower socioeconomic status, had less education, and more often were unmarried. The teenage mothers, who in this study received almost as much prenatal care as the older mothers, had a higher incidence of anemia and urinary tract infection during pregnancy, although not within all socioeconomic subgroups. Complicated deliveries were slightly less frequent among adolescents than among women in their 20s, and increased perinatal loss was not associated with early childbearing in this study.

Short gestational age, low birthweight, and low Apgar scores were more frequent among infants of adolescents. Despite the presence of these neonatal complications, they were slightly superior to infants of older mothers in psychomotor performance at 8 months of age, and did not differ from them in frequency of selected signs of developmental delay throughout the first year of life.

At age 4, children of teenage mothers had lower IQ scores, a higher retardation rate (although not in all socioeconomic status (SES) levels), less advanced motor development, and a higher frequency of deviant behavior than children of older mothers.

The effects of SES on test scores were much larger than the maternal age effects. At age 7, IQ scores of children of adolescents were only marginally lower in the white sample ($p < .06$), and did not differ from scores of the comparison group in the black sample. Standard scores on the Draw-A-Person Test, however, were slightly lower among children of black adolescents. A higher retardation rate among children of white adolescents was not significant within SES level. Below average achievement in arithmetic, and for blacks only, in reading and spelling, was more frequent among children of adolescents, and, as at age 4, more of them were rated as deviant in behavior. SES effects on IQ scores were large. Differences in low achievement among the maternal age groups were not significant within SES level.

A medical summary of physical development through age 7 showed that children of adolescent mothers had slightly increased frequencies of cerebral palsy, battered child syndrome; and among whites only, severe anemia. These conditions were rare in all maternal age groups.

Children born to adolescents were living more often in foster or adoptive homes at age 7 than were children born to women in their 20s. Their mothers more frequently were unmarried and had fewer children than the older mothers. Level of education was still lower among the young mothers, and more of them were receiving public assistance. A comparison of socioeconomic index scores in the prenatal and 7-year follow-up periods indicated downward social mobility for the adolescent mothers, and for the adult black mothers as well.

In summary, for most of the maternal and child characteristics examined, differences among age groups were smaller than those among socioeconomic or ethnic groups. Biological deficit was not strongly associated with early childbearing in this population of women, all of whom received some prenatal care, but the adverse effects of environmental deficit were evident in the lower performance levels of the offspring in early childhood. These findings, together with ones from other studies of cognitive development, suggest that support systems for pregnant teenagers should focus on plans for continued education for the mother and supplementary stimulation programs for the child.

Discussion: Needed Research

The primary prevention of unintended, and usually unwanted, pregnancy in teenagers is the overriding need. Nonetheless, the secondary prevention of the costly consequences of the many pregnancies that do occur is also of great importance. A judicious mix of research and intervention programs needs to be continued.

There has been substantial progress in primary prevention even though the number of sexually active teens has increased. While a substantial part of the preventive efforts has been the prevention of childbirth through use of abortion, some 420,000 in 1978, contraceptive programs have been effective, particularly among older teens. There is need, however, for research in three areas pertaining to primary prevention.

(1) Contraceptives that are more effective, acceptable and appropriate to teenaged use are required. The pill and the IUD, while effective and relatively safe, are not

optimal for teens whose sexual activity may be unplanned, sporadic, and infrequent. Many teens are concerned about the safety of so-called medical methods of contraception.

(2) Effective means are needed of educating teenagers, male as well as female, about sexuality, reproduction, contraception, the risks of pregnancy and STD and the costs and burdens of premature parenthood. It is clear that technical information, by itself, is not sufficient. A recent review by Greer Fox[23] suggested that premarital sex is less frequent and contraceptive use more responsible when parents have discussed these issues with their children. But, many parents have insufficient knowledge, unhealthy attitudes or are otherwise unable to do so. These parents and their children need the help of good educational programs in the schools and elsewhere. Teenaged women have been targeted for intervention more frequently than young men. Ways of reaching the males with information and encouraging responsible attitudes among them are needed urgently.

(3) Attention must be paid to the totally neglected area of virginity for both male and female teenagers. The value of postponing the onset of intercourse until a greater degree of maturity and readiness for family formation has been attained must be recognized and promoted. Many adolescent girls require reassurance that it is "all right" and "normal" to be a virgin. Examination of cultural influences in other countries, such as Japan and Sweden which have far lower pregnancy rates than the United States, might produce useful leads.

With respect to secondary prevention unresolved questions also remain. Understanding of underlying causes and relationships with outcome would benefit not only teenagers but the pregnancy outcome of all women. Questions might be raised on these issues: the causes and prevention of low birthweight; the role of the newly identified sexually transmitted diseases and their prevention; the effect of nutrition and physical fitness in improving pregnancy outcome; and the development of effective educational strategies to change lifestyles, prevent smoking, alcohol and nonmedical drug use.

Improvement of longer-range outcome for the children of teenagers requires research in parenting, mother-child interaction and father-child relationships, the causes of language and cognitive delay and cultural retardation and the development of effective strategies for parenting education. These are difficult and challenging but not insoluble areas.

Program evaluation is another essential area for research. In an era of dwindling resources, the measurement of the effectiveness and impact of prevention and intervention strategies and the determination of cost and benefits and the costs of not doing anything are important issues. Evaluation study designs also should permit, where possible, assessment of the effect of individual program components so that resources are not expended unnecessarily.

Summary

With increasing intensity during the past decade, the multifaceted problems of teenaged pregnancy and parenting have been brought to widespread public attention.

Much has been accomplished but the problems remain. Teenaged sexual activity and pregnancy are pervasive throughout all socioeconomic groups in the United States, but because abortion is an option frequently used among the more affluent and highly educated segments of our society, teenaged childbearing is more frequent among the poor, where resources for dealing effectively with the problem often are lacking.

We know many of the causes and consequences, but will we, as a society, have the resolve to deal fairly with them, and, if so, to make available sufficient resources for effective change? There lie the toughest questions!

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